

CO₂llaborate 2 Decarbonize

Decarbonization for a **net zero future**



A better way

We didn't just jump on the clean energy train;
we're the engine driving it forward.

The world wants action. More than 100 countries have committed to a carbon net-zero goal by the middle of this century.

As one of our founders put it, “there must be a better way” to safely and efficiently generate power. With over 90 active patents for carbon capture, Babcock & Wilcox (B&W) is a leader in the research and development of decarbonization technologies — most notably our ClimateBright™ solutions — with a focus on environmental stewardship for more than five decades.

Capturing the science behind carbon capture.

Every day, our goal is clear: develop and deliver clean power production technologies with the lowest carbon intensity. And it all happens through B&W research and innovation.

**NET ZERO
CO₂ EMISSIONS
GOAL**

**OVER 90
PATENTS
FOR CARBON
CAPTURE**

**40+ YEARS
CC TECHNOLOGY
LEADERSHIP**



Proven decarbonization — **today**

Babcock & Wilcox ClimateBright™ technologies can reduce carbon impact in a multitude of ways: with post-combustion or pre-combustion carbon capture, by utilizing cleaner burning fuels, or by harnessing the energy from a vast array of feedstock to generate hydrogen, steam or syngas with carbon isolation.

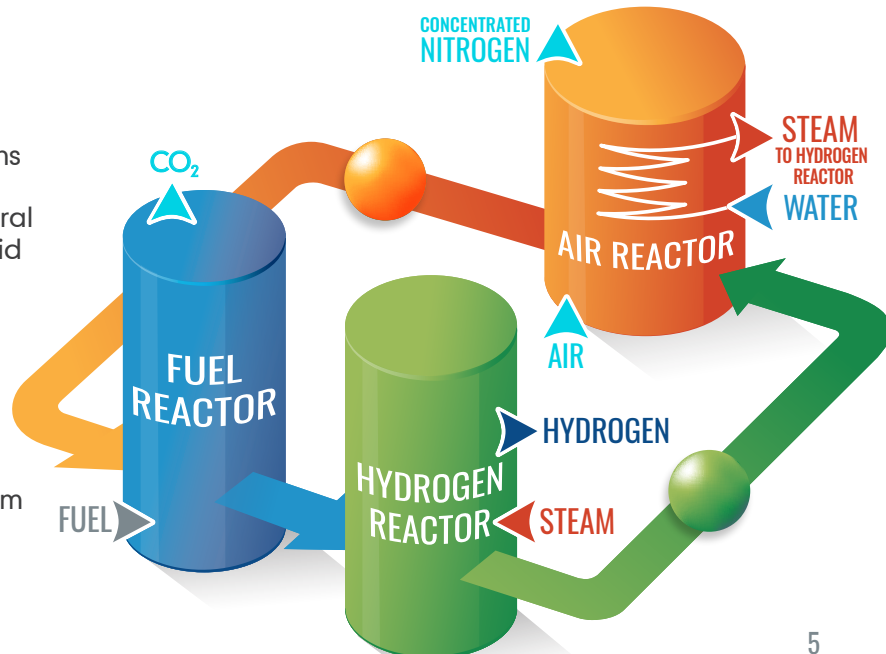


BrightLoop™ — The next generation of hydrogen production

We've advanced chemical looping technology for significantly reduced carbon-intensive hydrogen production applications.

Babcock & Wilcox, along with our university partner, has demonstrated that Chemical Looping for decarbonization applications is ready for commercial scale-up. Our collaboration has shown that Chemical Looping can effectively separate CO₂ while producing hydrogen, steam and/or syngas. Our Chemical Looping system is a game-changing platform technology capable of ushering in a new era of decarbonization.

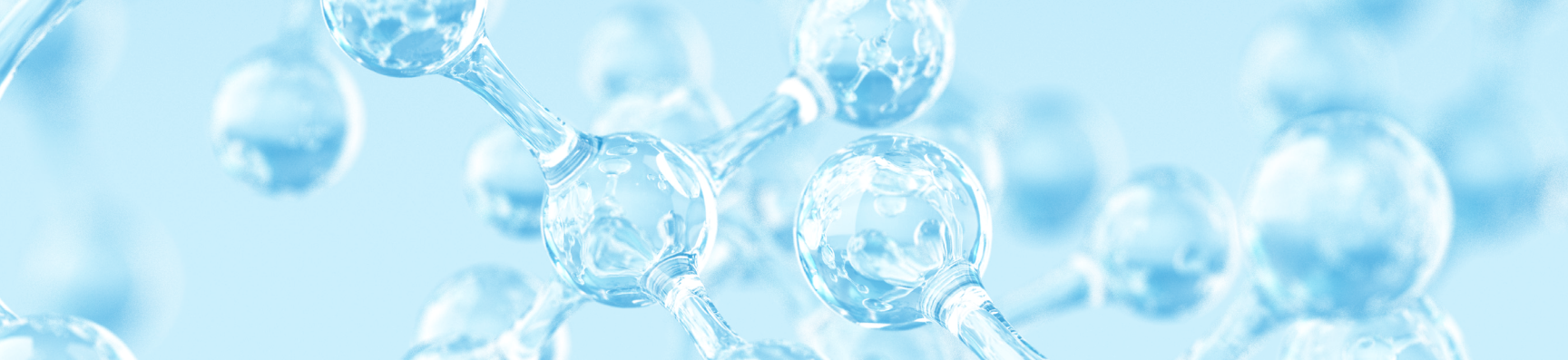
- In-situ carbon capture system
- Competitive hydrogen cost
- Economically scalable to large and small installations
- Flexibility for feedstock, including solid fuels (natural gas, biomass, petroleum coke, coal, municipal solid waste and syngas)
- Suitable to support a broad range of applications
- An exceptionally versatile oxide in terms of application, cost and abundance
- Successfully demonstrated hydrogen production from syngas at the U.S. National Carbon Capture Center
- Breakthrough technology under research with our university partner for 20 years



A particle breakthrough made it happen.

The unique TranspO₂rt™ oxygen-carrier particle used in our design is an extremely versatile oxide in terms of application, cost and abundance. This disrupter, breakthrough BrightLoop technology allowed B&W to advance the chemical looping process for practical implementation and low-carbon hydrogen production.





The versatile TranspO₂rt particle:

Exhibits sustainability by allowing reprocessing or reuse of any fine particles lost from the system

Reacts to a variety of feedstocks

Readily regenerates itself for extended “shelf life” in operation in a more environmentally friendly and economical way (unlike copper, nickel cobalt or others)

Applicable to many forms of power generation and industrial processes

The elements are easy to access and economical

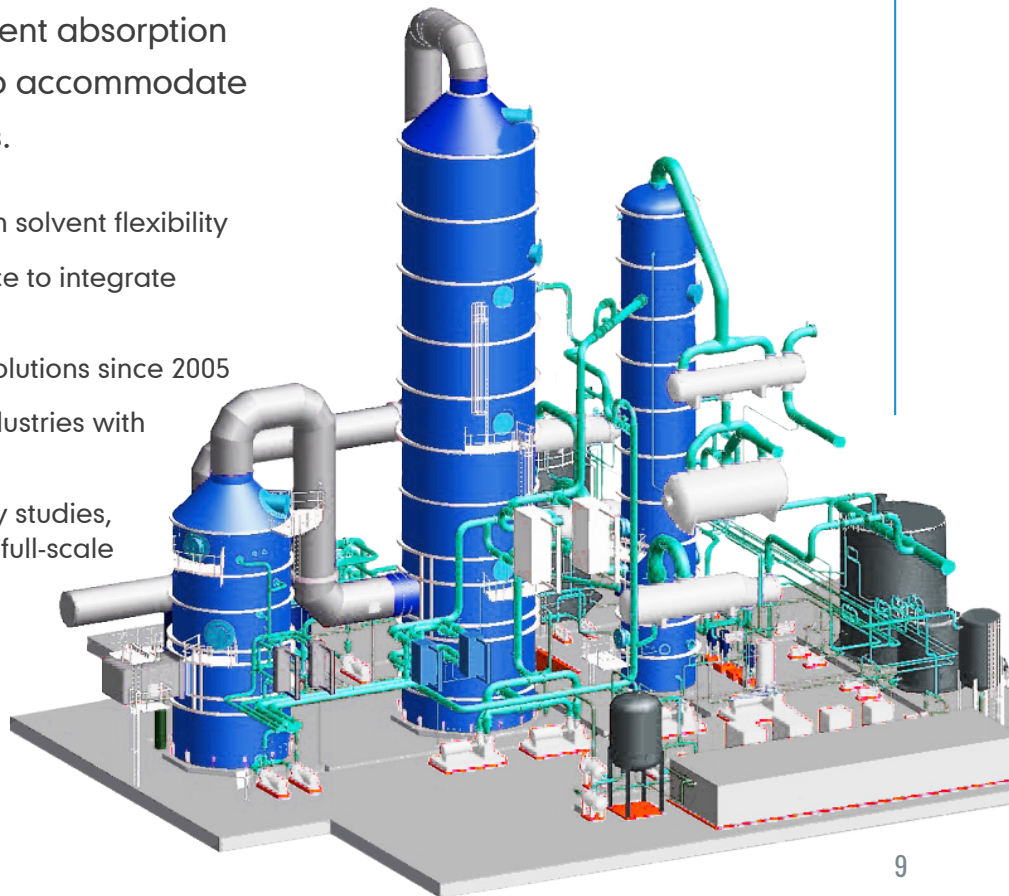


Capturing carbon using a
range of leading technologies

SolveBright™ POST-COMBUSTION

SolveBright™ regenerable solvent absorption technology can be designed to accommodate a customer's choice of solvents.

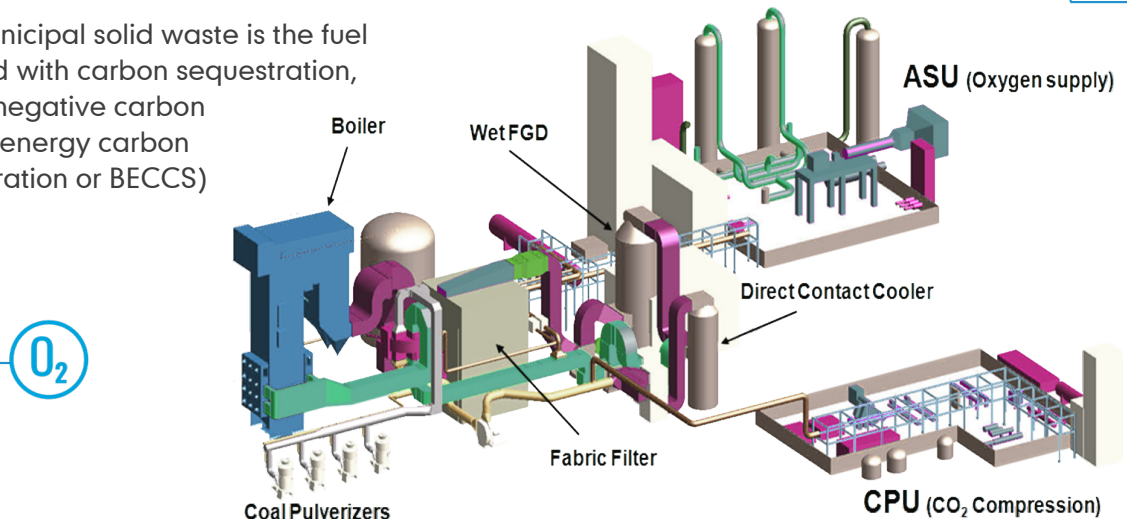
- Post-combustion carbon capture with solvent flexibility
- Extensive knowledge and experience to integrate technologies into an existing facility
- Experience with solvent scrubbing solutions since 2005
- Expertise across a wide range of industries with various fuels
- Total solution support, from feasibility studies, pre-FEED and pilot unit definition, to full-scale plants, tailored to your needs



OxyBright™ OXY-COMBUSTION

Oxy-combustion has been demonstrated at a large scale and is commercially ready.

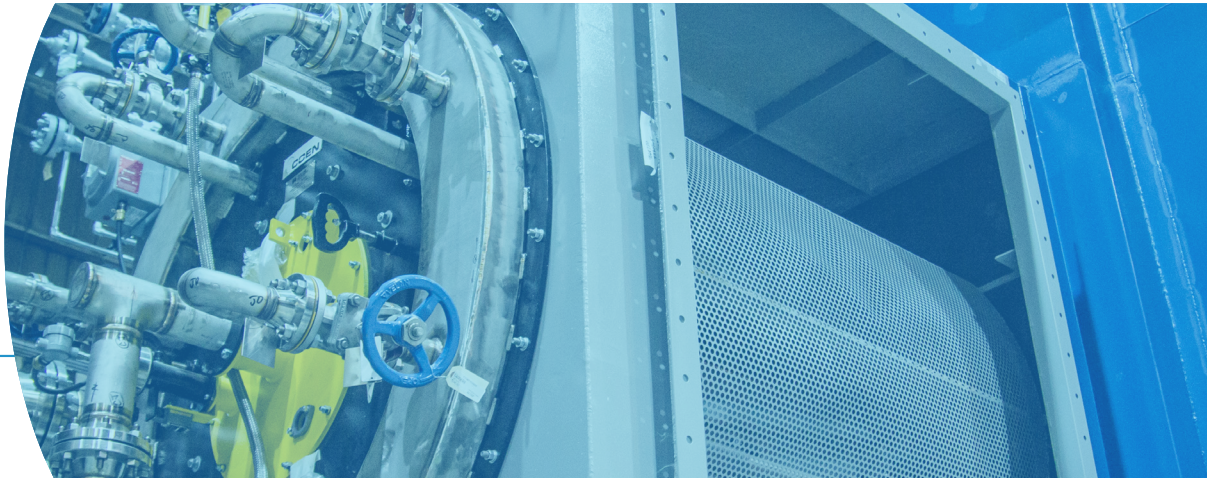
- The OxyBright™ technology produces a concentrated CO₂ stream suitable for sequestration and other uses, such as enhanced oil recovery
- Flexible applications for a variety of fuel sources in new or retrofit installations
- When biomass or municipal solid waste is the fuel source and combined with carbon sequestration, considered as a net-negative carbon intensity process (bioenergy carbon capture and sequestration or BECCS)
- Set the standard as the largest oxy-combustion system ever demonstrated (B&W's 30 MW_t plant)
- Selected as the oxy-combustion system for the Future Gen 2.0 167 MW_e commercial demonstration plant



BrightGen™ HYDROGEN COMBUSTION

B&W's BrightGen™ hydrogen combustion technology is currently in operation in more than 60 water-tube boilers firing hydrogen or hydrogen-blended fuels.

- A combustion technology that produces no CO₂ (with 100% hydrogen firing)
- For new installations or as a retrofit in fuel switching applications to fire hydrogen safely and reduce carbon intensity
- Can be co-fired with other gaseous fuels to lessen carbon impact



For a net zero world.

It's an ambitious goal, but we want to do our part. B&W is a leader, an innovator and an advocate for decarbonization in taking steps toward reducing greenhouse gases.

Leader. Proven pre- and post-combustion carbon capture technologies for decades.

Innovator. A history of research and innovation, with more than 17,000 technology patents, including a chemical looping decarbonization technology ready for commercial demonstration.

Advocate. It's only natural that Babcock & Wilcox commits resources for the pursuit of decarbonization technologies to make cleaner energy production standard. B&W is a resource for knowledge and insight about this subject.





We collaborate with universities
to create **best-in-class solutions.**

We partner with industry leaders
and energy producers to develop programs
that push the limits.

We have technologies that help improve energy
production **in over 90 countries.**

Babcock & Wilcox provides decarbonization technologies for:

- Electric power generation
- Hydrogen production
- District heating and cooling
- Emissions control
- Waste-to-energy

For industries ranging from:

- Steel
- Power
- Cement
- Oil and gas
- Carbon black
- Food manufacturing
- Pulp and paper

We are ready for a clear path
to a cleaner future.

We're here to CO₂llaborate, CO₂operate,
CO₂mmunicate and CO₂nserve.

Let's CO₂llaborate

babcock.com/decarbonization



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LITERATURE

